

MARSHALL STAR

Serving the Marshall Space Flight Center Community

June 18, 2009

Marshall to recognize team members at Honor Awards on June 24

The Marshall Space Flight Center will honor approximately 265 civil service employees and contractors during its annual Honor Awards ceremonies in Morris Auditorium on June 24. Marshall team members are invited to attend.

There will be two ceremonies, the NASA Honor Awards at 10 a.m. and the Marshall Center Honor Awards at 2 p.m. The NASA ceremony will recognize those who have made significant achievements to NASA's mission at an agency level. The Marshall ceremony will recognize those who have made outstanding mission contributions to the center.

NASA Safety & Mission Assurance Chief Bryan O'Connor will present the awards with Marshall Associate Director Robin Henderson. Please see pages 3-9 for this year's recipients.

Next launch attempt is July 11 for Endeavour

From combined reports

The next launch attempt of space shuttle Endeavour's STS-127 mission is targeted for July 11 at 6:39 p.m. CDT.

NASA postponed Endeavour's launch June 17 because of a leak associated with the gaseous hydrogen venting system outside the shuttle's external fuel tank.

The new launch date is after the end of an orbital sun-angle condition called a beta angle cut-out, which occurs between June 22 and July 10. The cut-out creates a thermal condition that prohibits shuttle and space station docked operations.

The June 17 leak is similar to one detected at the Ground Umbilical Carrier Plate, or GUCP, that prevented shuttle Endeavour's launch on June 13. The gaseous hydrogen venting system is used to carry excess hydrogen

See STS-127 on page 12

A look back

When the nation was getting ready for Apollo 11

By Mike Wright

Fanfares get people excited and so do finales. But there can be very long days and nights before someone musters the courage to say, "Let's do it," and the day that someone else says, "We're ready to do it right now."

On July 16, 1969, a Saturn V rocket designed and developed by the Marshall Space Flight Center launched the first Americans on their way to the lunar surface.

Many people still remember what they were doing and where they were that day. "That day" is what most people think about when it comes to historic events. But what about the time leading up to the event? Plans to send Americans to the moon officially began in 1961 when President John F. Kennedy said the nation would do it "before this decade is out."

See Apollo 11 on page 2



Saturn V first stage

Of course, Kennedy's announcement was not a random idea. And July 16, 1969, was not a random date that NASA picked to launch the mission. Before Kennedy's speech came hours of detailed advice and considerations. Before July 1969 came millions of technical challenges. Kennedy's advance thoughts about going to the moon fill hundreds of history books. Engineering challenges, like one on Apollo 10 just before Apollo 11, fill hundreds of technical reports.

The chronological scope of events related to the decision to do it and then actually going to the moon is overwhelming. However, the weeks before July 16, 1969, offer us a glimpse of the United States getting ready to initiate the largest engineering and scientific endeavor humankind has ever tackled.

On May 10, 1969, the Apollo 10 crew lifted off on a Saturn V. Astronauts Thomas Stafford, John Young and Eugene Cernan headed toward a long, looping orbit of the moon. During the launch, however, Stafford told ground controllers in Florida that "things are beginning to shake in here." Lee James, Marshall's Saturn Program manager, said engineers were aware that such oscillations could be expected. "We have some more work to do" before Apollo 11, he said.

On June 5, Marshall Center Director



Saturn V third stage



Saturn V second stage engines

Dr. Wernher von Braun reported, "AS-506 FRT was begun June 4 without launch vehicle constraints. Checkout is progressing satisfactorily in support of the scheduled launch readiness date." AS-506 referred to the Saturn V launch vehicle that NASA planned to use for the Apollo 11 mission. FRT referred to plans for a ground-based flight readiness test at the launch site in Florida.

Engineers completed that test June 7 despite a power outage that delayed it for several hours. NASA Associate Administrator George Mueller told NASA Administrator Thomas Paine that "open-ocean tests, including practice sessions on donning the biological isolation garments, were conducted off Hawaii." Mueller referred to plans to temporarily quarantine the Apollo 11 astronauts after they

returned from space. A key control room for the mission was "in the Apollo 11 configuration and checked out," Mueller wrote. "The mission software for the real-time computer complex was accepted on June 6." NASA managers intensely reviewed and re-reviewed plans for the mission. Work included certifying that the design for the Lunar Module met all mission requirements on the morning of June 12. Following that review, NASA senior managers met and concluded with a "detailed review and affirmative recommendation on the crew readiness for a July 16 launch."

On June 14, 15 and 16, the Apollo crew performed "successful rehearsals of the lunar landing operations." Those rehearsals involving astronauts Neil Armstrong, Buzz Aldrin and Michael Collins "strengthened the crew readiness to attempt man's first landing on the moon," Mueller wrote.

Meanwhile at Marshall, engineers found solutions to the oscillation problem on Apollo 10. Another 175 Marshall engineers and technicians went on standby at Marshall's Huntsville Operations Support to monitor another major ground test planned for the launch vehicle in Florida. James and a technical support crew from Huntsville traveled to Florida for the test. Hundreds of other engineers at Marshall and contractors' sites across the nation conducted final checks on the millions of Saturn hardware elements that they had designed, tested and built throughout the 1960s.

Marshall also made other plans for Apollo 11. At the center's formal dedication in 1960, President Dwight Eisenhower said he decided to name the new NASA center in Huntsville in honor of his famous World War II military colleague and hero, the late Gen. George C. Marshall. On June 18, 1969, von Braun sent a letter to Mrs. George C. Marshall. He referred to the upcoming Apollo 11 launch and that the Marshall Center was "playing a major role in this historic flight." The center is "very proud of the fact that your late beloved husband's name will be so closely bound to this great moment in history."

Wright is the Marshall Center historian.

2009 NASA/Marshall Center Annual Honor Awards

Presidential Rank Awards

Rank of Meritorious Executive



John S. Chapman
Shuttle Propulsion Office



Raymond G. Clinton
Science & Mission Systems Office



Carl Preston Jones
Engineering Directorate

NASA Distinguished Service Medal



Garry M. Lyles
Engineering Directorate

NASA Outstanding Leadership Medal



Stephen F. Cash
Shuttle Propulsion Office



Lisa W. Griffin
Engineering Directorate



James J. Lomas
Engineering Directorate



Warren T. Peters
Engineering Directorate



Christopher E. Singer
Engineering Directorate

NASA Exceptional Engineering Achievement Medal



Shawn P. Breeding
Shuttle Propulsion Office



Chad B. Bryant
Shuttle Propulsion Office



Sandra K. Elam
Engineering Directorate



Jonathan E. Jones
Engineering Directorate



Thomas C. Williams
Jacobs Technologies Inc./
Engineering Directorate

NASA Exceptional Administrative Achievement Medal



Nicola A. Duncombe
Office of Human Capital

NASA Equal Employment Opportunity Medal



Don R. Krupp
Engineering Directorate

NASA Exceptional Achievement Medal



Edward A. Ahmad
Office of Center Operations



Bryan L. Barley
Engineering Directorate



Julie A. Bassler
Science & Mission Systems Office



William J. Bierbower
Office of the Chief Counsel



Byron W. Butler
Office of Procurement



Robyn Carrasquillo
Engineering Directorate
Nominated/presented at JSC



Jerry R. Cook
Shuttle Propulsion Office



Kellie D. Craig
Office of Procurement



Leslie A. Curtis
Engineering Directorate



Tony R. Fiorucci
Engineering Directorate



Gary L. Humphrey
Office of Center Operations



Edward H. Kiessling
Safety & Mission Assurance Directorate



Charles A. Meegan
USRA/Science & Mission Systems Office



Elizabeth K. Nunn
Engineering Directorate



Patricia M. Patterson
Engineering Directorate



Neil E. Rainwater
Engineering Directorate



Randy P. Sparkman
Office of the Chief Information Officer



Timothy P. Vaughn
Engineering Directorate



Steven J. Wofford
Safety & Mission Assurance Directorate



Danny R. Woodard
Office of Strategic Analysis & Communications

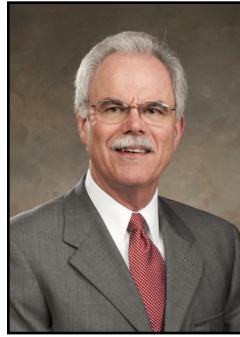
NASA Exceptional Service Medal



Shirley R. Blair
*Safety & Mission Assurance
Directorate*



Anita D. Garner
Shuttle Propulsion Office



Danny R. Hightower
Office of Human Capital



Judi A. Hollingsworth
*Office of Strategic Analysis &
Communications*



Terry L. Jones
*Safety & Mission Assurance
Directorate*



Kendall P. Junen
Ares Projects Office



Steven G. McDaniel
*Science & Mission Systems
Office*



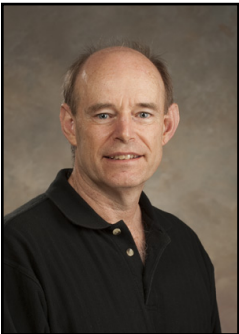
Dennis R. Moore
Engineering Directorate



Tomas E. Nesman
Engineering Directorate



Dawn M. Ray
Engineering Directorate



Franklin R. Robertson
*Science & Mission Systems
Office*



Richard N. Rodgers
*Office of the Chief Information
Officer*



Stephen G. Ryan
Engineering Directorate



Amy M. Schilling
*Safety & Mission Assurance
Directorate*



Terry L. Taylor
Ares Projects Office



Ann S. Towry
Shuttle Propulsion Office



William K. Ward
Engineering Directorate



Susan L. Whitfield
Office of Human Capital

Not pictured: Edward J. Lippincott, *Engineering Directorate*

NASA Exceptional Public Service Medal



Barry F. Battista
Tec-Masters Inc./
Engineering Directorate



James Gibson
Science Applications/Office of
the Chief Information Officer



Dorris C. Goodman
COLSA/Engineering
Directorate



Gerald Karr
The University of Alabama
Huntsville/Office
of Human Capital



Robert Talianko
SEI Group Inc./Office
of Center Operations

NASA HONOR AWARDS

NASA Certificate of Appreciation

Brenda K. Bailey, Engineering Directorate
Eric L. Corder, Ares Projects Office
Alton C. English, Engineering Directorate
John C. Garrison, Engineering Directorate
Donna L. Holland, Office of Center Operations
Alicia L. Kidd, Ares Projects Office
Frederick Kroeger, Jacobs Technologies Inc./Engineering Directorate
Chris Marchant, Draper Laboratories/Engineering Directorate
James J. Martin, Engineering Directorate
Denise P. Morris, Engineering Directorate
Lisa C. Nayman, Science Applications/Office of the Chief
Information Officer
Jeffery L. Ratley, Engineering Directorate
Barry C. Roberts, Engineering Directorate
Barbara A. Stone-Towns, Office of Strategic Analysis &
Communications
Kenneth M. Whitley, Engineering Directorate
Emily M. Willis, Engineering Directorate
Robert C. Zeek, Teledyne Brown Engineering/Engineering
Directorate

NASA Group Achievement Award

Ares 1 Upper Stage PDR Team
Ares 1 Vehicle Integration PDR Team
Ares PNAR Execution Team
Business Systems Team
ESO Applied Science USRA Team
External Tank Marine Equipment Analysis Team
Flame Trench Debris Fluid Dynamics Team
Flowliner Investigation Team
High Energy Pulsed Power Impact Gun System Team
ISS Water Recovery System Test and Verification Team
Liftoff Debris Support Team

NASA Group Achievement Award

Continued

Microgravity Science Glovebox Team
MSFC Environmental Excellence Team
Nanosail-D Payload Project Team
Nuclear Thermal Rocket Element Simulation Team
POIF/POIC International Partner Readiness Team
Reinforced Carbon-Carbon Repair Material Team
RSRM Railcar Safety and Derailment Response Team
S&MA Discipline Team
Santa Susanna Field Lab Transition Team
Shuttle Environmental Support Team
Space Shuttle Engine Cutoff System Long-Term Team
SSME Nozzle Fabrication Team
SSME High Pressure Fuel Turbopump Impeller Blade Team
STS-122/ET-125 Engine Cutoff Feed Through Test Team
STS-124 SSME Harness IFA Investigation Team
Thermal Imaging Testing Team

Awards External to NASA

2008 Federal Women's Program – Women's Equality Day Awards

Regina C. Grant, Clerical
Engineering Directorate

Alfrica L. Jones, Administrative
Engineering Directorate

Kathleen C. Matus, Professional Service
Shuttle Propulsion Office

Annette M. Sledd, Supervisor of the Year
Science & Mission Systems Office

MSFC HONOR AWARDS

MSFC Director's Commendation Honor Award

Erika Alvarez, Engineering Directorate
David M. Anderson, Ares Projects Office
Philip A. Benefield, Shuttle Propulsion Office
David B. Bullard, Engineering Directorate
Joseph L. Butler, Engineering Directorate
Matthew F. Cross, Engineering Directorate
Elbert F. Davis, Office of Center Operations
Steven K. Deutschendorf, Office of Chief Information Officer
Stephen E. Elrod, Science & Mission Systems Office
Karen P. Flanagan, Office of the Chief Financial Officer
Douglas J. Fooshee, Engineering Directorate
Richard F. Gladwin, Safety & Mission Assurance Directorate
Elizabeth D. Holleman, Engineering Directorate
Scott P. Hutchins, Engineering Directorate
Lorna G. Jackson, Engineering Directorate
Abbie J. Johnson, Office of Diversity & Equal Opportunity
Steven S. McClard, Science & Mission Systems Office
David L. McGaha, Office of Strategic Analysis & Communications
Rae W. Meyer, Engineering Directorate
Stephen L. Miller, Engineering Directorate
Edward E. Montgomery, Science & Mission Systems Office
Patty Montgomery, Office of Chief Information Officer
Lewis E. Moore, Engineering Directorate
Mahmoud R. Naderi, Office of Strategic Analysis & Communications
David M. O'Dell, Engineering Directorate
Keith J. Parrish, Engineering Directorate
Lawrence I. Pelham, Engineering Directorate
Willie J. Phelps, Engineering Directorate
Ronald B. Renfroe, Engineering Directorate
Keri H. Roberts, Office of the Chief Financial Officer
Alisa W. Shivers, Shuttle Propulsion Office
Michael R. Sosebee, Office of Procurement
Karen L. Spanyer, Engineering Directorate
James E. Stott, Safety & Mission Assurance Directorate
Margaret C. Stroud, Engineering Directorate
Brenda F. Tate, Office of Procurement
Angelia D. Walker, Engineering Directorate
Kevin S. Wallace, Engineering Directorate
Warren K. Woods, Safety & Mission Assurance Directorate
Lewis L. Wooten, Ares Projects Office

MSFC Certificate of Appreciation Honor Award

Russell S. Abrams, Shuttle Propulsion Laboratory
Charles L. Adams, Gray Research, Inc./Science & Mission Systems Office
Robert B. Adams, Engineering Directorate
Deborah R. Bagdigian, Engineering Directorate

MSFC Certificate of Appreciation Honor Award

Continued

Michelle M. Barnett, Engineering Directorate
Brent L. Beabout, Engineering Directorate
Ronald D. Beshears, Engineering Directorate
Barry A. Bowen, United Space Alliance/Shuttle Propulsion Office
Shawn E. Brechbill, Engineering Directorate
Kris Broll, Smithsonian Astrophysical/Engineering Directorate
Ronald R. Burwell, Engineering Directorate
Beth C. Fitzsimmons, Digital Fusion Solutions/Office of the Chief Financial Officer
Kerry M. Funston, Engineering Directorate
Charles L. Gamble, Safety & Mission Assurance Directorate
Gail H. Gordon, Engineering Directorate
Harlan J. Haight, Science & Mission Systems Office
Melody Herrmann, Science & Mission Systems Office
James B. Holt, Engineering Directorate
Mary R. Jones, AJT Associates/Office of Center Operations
Hong S. Kim, Science & Mission Systems Office
David F. Kincaid, Engineering Directorate
Oren Kornberg, Jacobs Engineering/Engineering Directorate
Lawrence D. Kos, Engineering Directorate
Kristine L. Mackey, Deltha Critique Joint Venture/Office of the Chief Counsel
David S. McGhee, Engineering Directorate
Shirley R. Novy, Engineering Directorate
Phyllis J. Olinger, Office of Diversity & Equal Opportunity
Tara T. Polsgrove, Engineering Directorate
Michael E. Prince, Engineering Directorate
Eunice L. Rose, Office of Procurement
Videra Sims, Engineering Directorate
Hee Jong Song, Engineering Directorate
Cynthia D. Stemple, Engineering Directorate
Richard G. Stutts, Safety & Mission Assurance Directorate
Barbara A. Tepper, Teledyne Brown Engineering Inc./Engineering Directorate
Jane L. Thomas, Office of Procurement
Chad W. Thrasher, Safety & Mission Assurance Directorate
Michael L. Tinker, Engineering Directorate
Michael R. Whitley, Safety & Mission Assurance Directorate
Danyelle J. Whitlock, EG&G/Office of Center Operations

MSFC Group Achievement Honor Award

50th Anniversary Education Events Team
Ares 1 Upper Stage Avionics and Software Integrated Product Team
Ares 1-X Avionics Team
Ares Ground Support Equipment Team
Common Bulkhead Component Development Team
Flight Support Motor-15 Investigation Team
Geographical Information System and Integration Team

MSFC HONOR AWARDS

MSFC Group Achievement Honor Award

Continued

Independent Assessment Anomaly Team
Lunar Environment Test System Team
Manufacturing and Assembly Design Team
MSFC Center IT Governance Implementation Team
MSFC Clean Water Act Compliance Team
MSFC Facilities Space Utilization Team
MSFC Hazardous Waste Management Team
MSFC Tennessee School for the Blind Team
Office of Human Capital FY08 Hiring Team
Operation and Supportability PDR Team
Regenerative ECLSS Water Recovery System Team
Return to Rocket City: Student Launch Events Team
RSRB Versamid 125 Vendor Change Team
Science and Mission Systems Office Resources Team
SSME Low Pressure Fuel Turbopump Reblock Team
SSME Low Pressure Oxidizer Turbopump Retrofit Team
Upper Stage Engine Critical Design Review Team
Vehicle Integration Core Team

MSFC Research and Technology Award

David Howard, Engineering Directorate
James Knox, Engineering Directorate

MSFC Technology Transfer Award

Dean Alhorn, Engineering Directorate
James Blackwood, Schafer Corp./Science & Mission Systems Office
James Coston, Engineering Directorate
Michael Damon, BAE Systems/Science & Mission Systems Office
Kenneth Dutton, Jacobs Technology Inc./Engineering Directorate
Michael Effinger, Science & Mission Systems Office
Kenneth Fernandez, Science & Mission Systems Office
Richard Fischer, Science & Mission Systems Office
David Howard, Engineering Directorate
Lauren Kerr, Carnegie Institution of Washington/Science & Mission Systems Office
Joseph Lacey, Schafer Corp./Science & Mission Systems Office
Larry Lechner, COLSA Corp./Engineering Directorate
Lisa Monaco, Jacobs Technology Inc./Science & Mission Systems Office
Heather Morris, Jacobs Technology Inc./Science & Mission Systems Office
Bruce Peters, Schafer Corp./Science & Mission Systems Office
William Sadowski, Jacobs Technology Inc./Engineering Directorate
Dennis Smith, Engineering Directorate
Andrew Steele, Carnegie Institution of Washington/Science & Mission Systems Office
Jason Turpin, Engineering Directorate

MSFC Technology Transfer Award

Continued

Norman Wainwright, Charles River Laboratories/Science & Mission Systems Office
Francis Wessling, Schafer Corp./Science & Mission Systems Office
Nathan Wharton, Schafer Corp./Science & Mission Systems Office

MSFC Patent

Jane C. Alexander, retired
Stephen W. Allison, Oak Ridge National Laboratory
Jeri Briscoe, Ares Projects Office
David J. Broderick, Virginia Space Grant Consortium
Jonathan Campbell, Science & Mission Systems Office
Eric L. Corder, Ares Projects Office
Richard W. Dabney, retired
Dennis Duncan Earl, Oak Ridge National Laboratory
Susan V. Elrod, Engineering Directorate
William D. Greene, Ares Projects Office
David E. Howard, Engineering Directorate
Richard T. Howard, Engineering Directorate
Anthony R. Kelley, Engineering Directorate
Valentin Korman, Madison Research Corp.
David Lehner, Engineering Directorate
Thomas E. Markusic, former NASA employee
Kurt A. Polzin, Engineering Directorate
James A. Richard, Engineering Directorate
Alvin J. Sanders, Oak Ridge National Laboratory
Larry L. Smalley, University of Alabama in Huntsville
Dennis A. Smith, Engineering Directorate
Kelly L. Smith, awarded posthumously
Boris Johann Stanojev, Madison Research Corp.
Paul D. Van Buskirk, Quality Monitoring and Control

MSFC Invention of the Year

Michael L. Book, Engineering Directorate
Thomas C. Bryan, Engineering Directorate
Richard T. Howard, Engineering Directorate

MSFC Software of the Year

Jess H. Jones, AI Signal Research Inc.
Jen-Yi Jong, AI Signal Research Inc.
Thein A Maung, AI Signal Research Inc.

Utah State rocketeers win NASA's University Student Launch Initiative for second straight year

By Rick Smith

Student rocketeers from Utah State University in Logan – who launched a sophisticated rocket of their own design to an altitude of 5,333 feet – won the 2008-2009 University Student Launch Initiative.

They beat 18 other American college and university teams to clinch their second straight victory in the annual competition, which is organized for NASA by the Marshall Space Flight Center's Academic Affairs Office. The competition is sponsored by ATK Space Systems of Magna, Utah.

The launch challenge tasks student teams to design and build reusable rockets that can carry working science payloads one mile high and return them safely to Earth. The challenge concludes each spring with a day-long launch event, held this year April 18 at Bragg Farms in Toney, Ala. NASA's competition judges then spend a month evaluating each team's rocket design, flight data and final written report about payload results and overall experience.

The annual competition is designed to engage and inspire technically gifted young people to pursue careers in fields devoted to science, technology, engineering and mathematics.

The Utah State team edged out second- and third-place teams from the University of Alabama in Huntsville and the Florida Institute of Technology in Melbourne, respectively. Florida Institute of

Technology, which fielded a rocket team for the first time this year, also was named the "Rookie Team of the Year" for its noteworthy first performance in the challenge.

As the top winner, the Utah State team received \$5,000 from ATK and will be invited by NASA to witness an upcoming space shuttle launch at Kennedy Space Center, Fla.

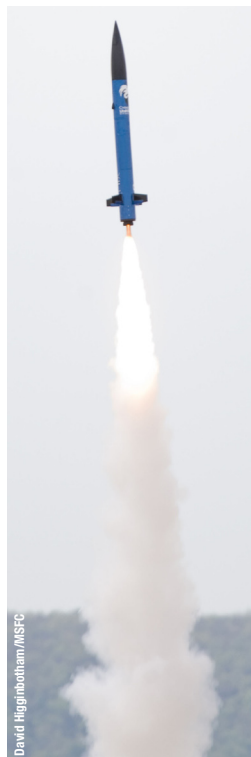
"Every year, our student participants bring a new depth of ingenuity and technical savvy to this competition," said Tammy Rowan, manager of Marshall's Academic Affairs Office. "We are thrilled to give them this very practical,

hands-on glimpse of the challenging and rewarding career opportunities that await them. We're confident the rockets they're building and launching now are just a prelude of the terrific work they'll do in the future."

"It was amazing to see the level of talent that participated in this year's competition," said Jim Halsell, ATK Space Systems vice president of Space Exploration Systems and a former NASA astronaut. "If the students continue on this path into careers in engineering and science, America will have a tremendous future in space exploration as we return to the moon and journey out into the far reaches of the solar system."

For more information about the University Student Launch Initiative, visit <http://education.msfc.nasa.gov/usli>.

Smith, an employee of AI Signal Research Inc., supports the Office of Strategic Analysis & Communications.



Utah State's winning rocket leaps off the pad during the University Student Launch Initiative.



Winning student rocketeers and instructors from Utah State University in Logan watch their launch vehicle soar April 18 at NASA's 2008-2009 University Student Launch Initiative.

'Focus on Marshall' looks at upgrades to Michoud and testing of Ares rocket parachutes

By Lori Meggs

The largest rocket parachutes ever made and a makeover at the Michoud Assembly Facility in New Orleans are highlighted in the June episode of the Marshall Space Flight Center's monthly video program, "Focus on Marshall."

"Focus on Marshall" takes viewers to the Michoud facility where things are ramping up to help build the new Ares rockets – the agency's next-generation spacecraft and crew launch

vehicle system. Viewers will see all the new tools to be used for constructing portions of the rocket and learn about future plans for the facility.

Another segment of the program takes viewers to the Arizona desert in Yuma for tests of the Ares first stage parachute system. That system will be used to bring the Ares I and V reusable solid rocket boosters to a safe water landing after launch. The parachute system is based on the space shuttle solid rocket

booster parachutes. Viewers will learn how the system was redesigned for Ares, becoming the largest parachutes ever constructed for a rocket system.

"Focus on Marshall" airs on Marshall TV on June 18, June 23 and June 25 at 11 a.m., noon and 1 p.m. It also is available on NASA TV, Inside Marshall and on the NASA Portal.

Meggs, an AI Signal Research Inc. employee, supports the Office of Strategic Analysis & Communications.

Classified Ads

To submit a classified ad to the Marshall Star, go to Inside Marshall, to "Employee Resources," and click on "Employee Ads — Submit Ad." Ads are limited to 15 words, including contact numbers. No sales pitches. Deadline for the next issue, June 25, is 4:30 p.m. Thursday, June 18.

Miscellaneous

Sebo commercial upright vacuum cleaner, \$150. 508-4379

Surround sound system, 6.1 Harmon/Kardon, HKTS 8, AVR 135, four speaker stands, DVD Player 22, \$500. 509-2524

Weider weight bench, incline/decline, leg press, dumbbell bars, 400 pounds of weights, \$175. 655-5241

Lily Flag pool membership, \$800. 656-2951

Sofa bed, light blue/white check design, \$150. 881-3965

Gold's Gym elliptical trainer, \$90; Sears Lifestyle magnetic resistance exercise bike, \$50. 772-1870

Wedding dress, \$700. 651-4723

Yamaha CPX-15E acoustic electric guitar, Egyptian-style inlays, original case, \$1,000. 468-8136

Goats, Nubians (dairy), two does, one buckling, \$70 obo. 828-9494

Kid's Home Depot work bench, battery-operated tools, accessories, sawhorses, \$40. 777-1810

Complete Smith weight set, \$400. 759-2101

Serta King mattress/box springs, \$200. 881-7000

Brio toy train, track, trains, bridges, tunnels, \$200. 837-6274

Four tickets, AMP Energy 500 Talladega Sprint Cup Race, Nov. 1, section F, row 14. 374-9607

2003 Ford F-150 crew cab factory bedliner, \$100. 655-0409

Utility trailer, 4x10, 3,500-pound axel, spare, lights, 6-foot bi-fold gate/ramp, \$800. 975-0619

Vehicles

2008 Harley-Davidson Road King Classic, antilock brakes, extra chrome and backrest, 3k miles, \$17,500. 656-8858

2008 Caliber SXT, red, 30 MPG, under warranty, 18.5k miles, \$12,025. 725-7120 or 529-7360

2006 Chrysler Pacifica Touring, red, third-row seat, 23k miles, \$14,500. 797-1300

2005 Ford Five Hundred Limited, AWD, leather, moon-roof, 44k miles, \$12,500. 651-8264

2005 Hyundai Elantra, red, new tires, 29k miles, \$7,000. 655-6293

Two 2004 STX-15F Jet Skis, 4-stroke, 160 HP, 29-31 hours, trailer, dry box, \$14,000. 837-3804

2004 Motorhome, R-Vision 33' Class-A, workhorse chassis, extended warranty, www.thewillettfamily.com/rv, \$55,000. 883-7021

2003 Gas Club Car golf cart, beige, \$2,200 obo. 682-6326

1997 Chevy Z71, extended cab, new tires, 179k miles, \$4,700 obo. 698-0848

1993 Chevy Corvette Coupe, 40th anniversary edition, glass top, 71k miles, \$13,500. 656-0633

Wanted

FAA Inspection Authorization needed for annuals/maintenance on Cessna 210M hangered at Huntsville airport. 832-928-6066

Used lightweight, preferably folding, adult tricycle. 882-2400

Chain-link gate, 5 feet or larger. 682-4285 or 355-5870

White/ivory dresser, mirror, nightstand, good condition. 828-7101

Found

Pair of steel/gray glasses, June 5, south end of Building 4200. 544-4680

Computer cable, Building 4203 north parking lot. 682-2354

Shuttle Buddies to meet June 22

The Shuttle Buddies will meet at 8:30 a.m. June 22 at Mullins Restaurant on Andrew Jackson Way.

For more information, call Deemer Self at 881-7757.

STS-127 *Continued from page 1*

safely away from the launch pad.

"We're going to step back and figure out what the problem is and go fix it," said LeRoy Cain, deputy Space Shuttle Program manager, during a briefing June 17 after the launch was postponed. "Once we get it fixed and are confident that we have a solution that's going to work and allow us to go fly safely, we'll proceed forward," Cain said.

Space shuttle Discovery experienced a similar fuel leak on March 11. Technicians at the Kennedy Space Center, Fla., removed and replaced a ground umbilical carrier panel and seal on Discovery. It successfully launched on the STS-119 mission on its second attempt, on March 15. Both STS-119 and STS-127 leaks will be evaluated to determine the cause, Cain said.

External Tank Project Office engineers at the Marshall Space Flight Center are part of a continuing effort to find the root cause of the gaseous hydrogen venting system failure, said John Chapman, the project manager. Other members of a troubleshooting team include technicians and engineers at the Kennedy Center, the Johnson Space Center in Houston and NASA's Michoud Assembly Facility in New Orleans.

Teams at the Kennedy Center followed the same repair method after the postponed June 13 launch as they did for the leak encountered during the STS-119 countdown.

STS-127's 16-day mission to the International Space Station will feature five spacewalks and complete construction of the Japan Aerospace Exploration Agency's Kibo laboratory.



A close-up image of the Ground Umbilical Carrier Panel shows where ground support equipment attaches to space shuttle Endeavour's external fuel tank.

Astronauts will attach a platform to the outside of the Japanese module that will allow experiments to be exposed to space.

Mission Commander Mark Polansky, who has a Twitter account named Astro_127, can be followed online at http://www.twitter.com/Astro_127.

For information about NASA TV streaming video, downlink and schedule information, visit <http://www.nasa.gov/ntv>.

For the latest information about the STS-127 mission and its crew, visit <http://www.nasa.gov/shuttle>.

For information about the International Space Station, visit <http://www.nasa.gov/station>.

Obituaries

R.I. Collinsworth Jr., 81, of Granberry, Texas, died May 2. He retired from the Marshall Center in 1988 as a landscape architect supervisor.

Alvin Perkins, 82, of Hazel Green died May 20. He retired from the Marshall Center in 1982 as an engineer.

Charles Lawson Greer Sr., 87, of Huntsville died May 23. He retired from the Marshall Center in 1990 as an engineer. He is survived by his wife, Bobbie Greer.

John Leon Hofues Jr., 81, of Huntsville died June 10. He retired from the

Marshall Center in 1993 as a technical publications writer/editor. He is survived by his wife, Nancy Wells Hofues.

Ron McIntosh, 67, of Huntsville died June 11. He retired from the Marshall Center in 2001 as an engineer. He is survived by his wife, Jean McIntosh.

MARSHALL STAR

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Marshall Space Flight Center, Alabama 35812
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